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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

BISSETT, MELANIE D

ART UNIT PAPER NUMBER

1711

DATE MAILED: 12/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/698,321

Applicant(s)

BOGERD ET AL.

Examiner

Melanie D. Bissett

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/04; 7/04</u> . | 6) <input type="checkbox"/> Other: ____. |

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: all parts of Figure 5. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 11-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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4. Claims 11 and 12 refer to "the thermoplastic polymer" of claim 1. However, claim 1 cites two different thermoplastic polymers. It is unclear whether the applicant intends to further limit the polymer of the core layer or the polymer of the first cap layer.
5. Claim 13 recites the limitation "the polyester" in line 1. There is insufficient antecedent basis for this limitation in the claim.
6. Claim 17 recites the limitation "the UV absorbers" in line 1. There is insufficient antecedent basis for this limitation in the claim.
7. Claim 18 recites the limitation "the UV absorbers" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 3, 6-8, 10-23, 27-31, and 33-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Döbler.
10. Döbler discloses a heat-absorbing system comprising a first layer containing an ultraviolet absorber, a second layer containing an infrared absorber and an ultraviolet absorber, and a third layer (abstract). Where the core layer acts as a substrate, the core layer has a thickness of 1-30 mm [0037]. Infrared absorbing additives are included in the core layer in amounts of 0.001-10 g/m², preferably 0.1-1 g/m² in preferred

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concentrations of 20-400 ppm [0047-0048]. Ultraviolet absorbers include benzotriazoles, triazines, and benzophenones [0049] and are used in amounts of 1-10% by weight in the cap layer [0052]. The layers include thermoplastic polymers, including polycarbonates and polyesters [0055]. Bisphenol A polycarbonates are exemplified. Heat stabilizers may be added, including hindered phenols, phosphates, and phosphines [0088]. The layers are coextruded, laminated, and thermoformed ([0091-0092]; examples).

11. Regarding the properties of the sheet, the reference teaches that the sheets transmit more than 70% in the visible light region [0014]. Also, because the reference teaches the claimed coextruded sheets having the claimed amount of UV absorber in the outer layer and the claimed amount of IR absorber in the core layer, it is the examiner's position that the sheets of Döbler's invention would inherently possess the claimed infrared absorption and UV absorption.

12. Regarding claims 13-16, it is noted that the claims only limit "the polyester". When read into claim 11 (which has antecedent basis for such a limitation), the Markush group still contains other polymers, where "the polyester" is further limited. Thus, when polycarbonates are chosen for the sheets of the reference, the further limitation of "the polyester" provides no patentable weight, and the claims are anticipated.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Döbler.

15. Dobler applies as above, teaching the inclusion of heat stabilizers but not specifically noting the preferred amounts of added heat stabilizers. However, the reference does indicate that additives should preferably added in amounts of 0.01-1% by weight [0087]. It is the examiner's position that it would have been prima facie obvious to include the heat stabilizers in the core layer in any amount necessary to optimize the heat stabilization of the layers.

16. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Döbler in view of Adachi et al. Adachi et al. (US 6,060,154) can be found on the applicant's Form PTO-1449.

17. Döbler applies as above, teaching the use of organic infrared absorbers but failing to teach the use of the claimed boride IR absorbers. Adachi teaches coating solutions for forming films, where synthetic resin binders may be included and fine particles of IR absorbers are used (abstract). Lanthanum boride is listed as a preferred compound, where the fine particles cut off light in the infrared range but transmit light in the visible range (col. 2 lines 59-65). The particles have sizes of less than 100 nm, since larger particles do not disperse as well and cause hazing (col. 3 lines 16-30). The lanthanum boride particles provide a purplish red film (col. 3 lines 1-5). The particles of the invention disperse well in solvents and resins, providing improved visible light

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transmission without dissolving the particles. Since Döbler expresses concern about the solubility of the organic IR absorbers, it is the examiner's position that it would have been prima facie obvious to use the boride particles of Adachi's invention to provide IR absorption to the layers while also providing improved visible light transmission and desired coloration. Such materials would not need to be dissolved in the resin but would form suitable films by dispersion of the particles.

18. Claims 2, 24-25, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Döbler in view of La Cellophane. La Cellophane (GB 2014513A) can be found on the applicant's Form PTO-1449.

19. Döbler applies as above, teaching multilayer structures for multiple applications, including greenhouses [0098], but failing to specify the inclusion of UV absorbers both of the layers surrounding the core layer (B). Döbler shows several layer structures, where thermoplastic layers (S) or (C) would be in contact with layer (B) on the side opposite layer (A) [0024; 0035]. UV absorbers are included in layers (A) and (B) but not necessarily in layers (S) or (C). La Cellophane teaches multilayer thermoplastic structures for greenhouses, where a lowermost layer comprises UV absorbers to prevent aging and subsequent layers are opaque to infrared radiation (p. 1 lines 54-65). The UV absorbers in subsequent layers also serves to prevent aging of the lowermost layer. Examples show that multiple subsequent layers should also include UV absorbers. From this teaching, it is the examiner's position that it would have been

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prima facie obvious to include UV absorbers in both the lowermost and subsequent layers of Döbler's invention to prevent aging and weathering of all the layers.

20. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Döbler in view of Burkhardt et al.

21. Döbler applies as above, teaching that the films may be coextruded but failing to mention the use of two- or three-roll mills. Burkhardt teaches that conventional film extrusion practices include three-roll mills to calibrate and cool the film (Figure 25), while coextrusion practices include similar machinery, where the streams are individually shaped prior to being combined ("Coextrusion", 1.4.3). It is the examiner's position that it would have been prima facie obvious to use roll mills in Döbler's coextrusion line to combine, calibrate, and cool the films.

22. Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Döbler in view of MacGregor et al.

23. Döbler applies as above, teaching that polycarbonates or polyesters may be used in the invention but failing to teach the use of cycloaliphatic polyesters or polyarylates. MacGregor teaches multilayer plastic composite sheets comprising a thermoplastic substrate and at least one surface layer of cycloaliphatic polyester (abstract). Cycloaliphatic polyesters have improved weatherability, chemical resistance, and water absorption properties (col. 2 lines 62-65), and PCCD (fitting the applicant's formula (X)) is the most preferred polyester (col. 4 line 46-col. 5 line 13). It is the

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examiner's position that it would have been prima facie obvious to use PCCD layers in Döbler's invention to provide films of improved weatherability, chemical resistance, and low water absorption.

24. Regarding claims 15-16, it is noted that these claims only further limit the polyarylate species of claim 13. When read into claim 13, the Markush group still contains cycloaliphatic polyesters alone. Since this combination suggests such cycloaliphatic polyesters alone, it is the examiner's position that claims 13-16 are obvious over the combination.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie D. Bissett whose telephone number is (571) 272-1068. The examiner can normally be reached on M-F 8-4:30.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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A handwritten signature in black ink, appearing to read 'Melanie D. Bissett', with a long horizontal flourish extending to the right.

Melanie D. Bissett

Patent Examiner

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mdb